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On August 19, 2002

TOWNSEND and TOWNSEND and CREW LLP

By: [signature]

PATENT
Attorney Docket No.: 015280-413100US
Client Ref. No.: E-093-00/1

COPY OF PAPERS ORIGINALLY FILED

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

CLIFTON E. BARRY III et al.

Application No.: 09/888,320

Filed: June 22, 2001

For: METHODS OF DIAGNOSING MULTIDRUG RESISTANT TUBERCULOSIS

Examiner: Sakelaris, Sally

Art Unit: 1634

AMENDMENT AND RESPONSE TO RESTRICTION REQUIREMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicants respond herein to the Restriction Requirement mailed April 18, 2002 (hereafter, the "Action" or the "Restriction"). A petition for an extension of time and the appropriate fees accompany this response.

Applicants elect Group I, with traverse. Within Group I, Applicants further elect Group 10, amino acid substitution A381P, with traverse. In a telephone interview, the Examiner agreed to rejoin Group IV (claims 25-29) with Group I. Therefore, the present election encompasses claims 1-12, 16, 21, 22-24, and 25-29.

Please amend the above-identified application as follows:

IN THE CLAIMS:

Please **cancel** claims 6, 7, 23, 24, 26, and 27.

REMARKS

The Action restricts the 33 claims of the application into 153 groups.[1] Applicants believe the restriction is unsupportable and is contrary to both the MPEP and to applicable law. Accordingly, Applicants traverse the restriction.

As an initial matter, Applicants note with appreciation the Examiner's courtesy in considering the undersigned counsel's comments on the restriction in brief telephone interviews held on August 5, 2002, and her agreement to recombine Group I and Group IV (claims 25-29). Applicant also note that the cancellation of the claims drawn to particular primers that can be used to amplify the EtaA gene obviates the Action's requirement to elect a particular set of primers.

I. The Restriction Errs in Adding Recitations to Claim 1.

The Action restricts Claim 1 into three different groups. First, the Action states that claim 1 is drawn to methods of detecting a mutation in the nucleic acids of the EtaA gene, and places it in Group I. Second, the Action next states that claim 1 is drawn to methods of detecting a mutation in a protein by the specific binding of an antibody, and places it in Group II. Third, the Action states that claim 1 is drawn to methods of detecting a mutation by determining the ability of a Mycobacterium to oxidize a thioamide or thiocarbonyl through an oxidation assay and, and places the claim in Group III. Action, at page 1.

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[1] The Action initially restricts the claims into 8 groups. But, the Action further requires that if the Applicants elect any of groups II, III, or VII, they must make an election of one of 10 mutations (for a total of 30 groups), and if they chose either of groups I or IV, they would have to choose not only one of these 10 mutations, but also one of 6 sets of primer pairs by which to amplify the gene, for a total of 120 more groups. Adding the 120 groups created by the double restriction of groups I and IV, and the 30 groups created by the 10 way restriction of groups II, III, and VII to original groups V, VI, and VIII, gives a total of 153 groups.

Contrary to the Action's assertion, claim 1 is not "drawn to methods of detecting a mutation in the nucleic acids of the EtaA gene," "drawn to methods of detecting a mutation in a protein by the specific binding of an antibody," or "drawn to a method of detecting a mutation determining the ability of Mycobacterium to oxidize a thioamide." Claim 1 reads as follows:

> 1. A method of determining the ability of a *Mycobacterium tuberculosis* bacterium to oxidize a thioamide or thiocarbonyl, said method comprising detecting a mutation in an EtaA gene (SEQ ID NO:1) in said bacterium, wherein detection of the mutation is indicative of decreased ability to oxidize a thioamide or a thiocarbonyl.

Markedly lacking from the claim are any recitations regarding particular method of detecting the presence of the mutation.

To the contrary, and as discussed with the Examiner in a telephone conference on August 5, 2002, claim 1 claims a method of determining the ability of *Mycobacterium tuberculosis* bacterium to oxidize a thioamide or thiocarbonyl by detecting the presence of a mutation in the EtaA gene, regardless of the particular method used to detect the presence of the mutation. The Action's division of the claim into three separate groups purportedly drawn to different methods of detecting such mutations therefore rests on importing into the claim recitations from dependent claims that are drawn to separate embodiments of the invention. The Action cites no justification for rewriting the claim by importing into it recitations from the dependent claims.

Moreover, by reading the recitations of the dependent claims into the base claim, the Action divides the claim up into parts, rather than examining the claim as a whole. The U.S. Court of Appeals for the Federal Circuit, whose rulings the Patent and Trademark Office is obliged to follow, has specifically held that individual claims cannot be divided and examined in part. As the Federal Circuit's predecessor court, the Court for Customs and Patent Appeals ("C.C.P.A.") stated:

> As a general proposition, an applicant has a right to have each claim examined on the merits. If an applicant submits a number of claims, it may well be that pursuant to a proper restriction requirement, those claims will be dispersed to a number of applications. Such action would not affect the rights of the applicant eventually to have each of the claims examined in the form he considers to best define his invention. If, however, a single claim is required to be divided up and presented in several applications, that claim would never be considered on the merits. The totality of the resulting fragmentary claims would not necessarily be the equivalent of the original claim. Further, since the subgenera would be defined by the examiner, rather than by the applicant, it is not inconceivable that a number of the fragments would not be described in the specification.

In re Weber, Soder and Boksay, 198 USPQ 328, 331 (C.C.P.A. 1978).[2] *See also In re Haas,* 179 USPQ 623, 624-625 (C.C.P.A. 1973) (*In re Haas I*); and *In re Haas,* 198 USPQ 334, 334-337 (C.C.P.A. 1978) (*In re Haas II*). The Court's concern is particularly appropriate in this case, since the three methods of detecting mutations in the EtaA gene into which the Action breaks claim 1 do not necessarily encompass the universe of ways in which a practitioner may detect the presence of a mutation in the gene.

Moreover, it has long been held that an Examiner may not reject a particular claim on the basis that it represents "independent and distinct" inventions. *See In re Weber,* 198 USPQ at 328. The courts have definitively ruled that the statute authorizing restriction practice, *i.e.*, 35 U.S.C. § 121, provides no legal authority to impose a restriction requirement on a single claim, even if the claim presents multiple independently patentable inventions. *See id.*; *In re Haas I*, 179 USPQ at 623; and *In re Haas II*, 198 USPQ at 334. In the cases set forth above, the courts expressly ruled that there is no statutory basis for rejecting a claim for misjoinder, despite previous attempts by the Patent Office to fashion such a rejection. As noted in *In re Weber*:

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[2] The Federal Circuit expressly adopted the holdings of the CCPA as precedent of the Federal Circuit.

> The discretionary power to limit one applicant to one invention is no excuse at all for refusing to examine a broad generic claim-no matter how broad, which means no matter how many independently patentable inventions may fall within it.

In re Weber, 198 USPQ at 334.

Therefore, dividing claim into three groups to be examined on the basis that each group allegedly represents an independent and distinct invention is clearly improper. Applicants respectfully request that the Examiner withdraw the restriction requirement with respect to Groups I through III.

2. The Restriction Set Forth in the Action Does Not Accord with the MPEP

The Action's restriction of claim 1 is not in accord with the practice mandated by the MPEP. Claim 1 is a genus claim, the method of which does not depend on the particular method used. MPEP §809.03 (8th Ed. August 2001) states that a genus claim that links species claims is a "linking claim." The section further states that such claims are inseparable from the otherwise divisible species and prevent restriction between inventions.[3]

According to the MPEP, where there is a linking claim, a restriction may be imposed. But, the proper practice is require the applicant to elect an invention and to examine the linking claim with the invention elected. "[S]hould any linking claim be allowed, the restriction requirement must be withdrawn." MPEP § 809. Moreover, the MPEP provides a form paragraph to be used in the case of linking claims. See, MPEP §

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[3] MPEP §809.03 provides:

> There are a number of situations which arise in which an application has claims to two or more properly divisible inventions, . . . but presented in the same case are one or more claims . . . inseparable therefrom and thus linking together the inventions otherwise divisible.
>
> The most common types of linking claims which, if allowed, act to prevent restriction between inventions that can otherwise be shown to be divisible are:
>
> (A) genus claims linking species claims. . . .

809.03 at page 800-50. That paragraph provides that the Applicant is entitled to consideration of a reasonable number of disclosed species in addition to the elected species provided (as here) that all the claims to each additional species are written in dependent form or otherwise include all the limitations of an allowed generic claim. The Action fails to note that claim 1 is a linking claim, and therefore fails to note that the restriction among the various species for detecting mutations must be withdrawn if linking claim 1 is found allowable.

Accordingly, the restriction as set forth in the Action does not comport with the MPEP. It should be reconsidered and, upon reconsideration, withdrawn.

3. The Action Incorrectly Restricts the Individual Mutations

The Action states that, if inventions I-IV or VII are elected, restriction is necessary among an additional 10 groups, representing the individual exemplar mutations claimed in Markush groups in claims 2 and 4. Action, at pages 3-4, bridging paragraph. According to the Action, the mutations are structurally and functionally distinct from one another. Applicants traverse.

As an initial matter, the Action errs in considering these mutations to be "functionally distinct from each other absent evidence to the contrary," as stated on page 4 of the Action. The Action misses the point that each of these mutations was found in the specification to render *M. tuberculosis* resistant to the effect of the anti-tuberculosis drug ethioamide ("ETA"). See, specification at, e.g., page 8, lines 15-17 and Example , pages 28-29, bridging paragraph. Thus, there is "evidence to the contrary" in the record, and the evidence is that each of the mutations has the same function: it renders M. tuberculosis resistant to ETA and similar drugs.

Moreover, MPEP § 803.02 emphasizes that since *In re Weber, supra*, it is improper for the Office to refuse to examine what the applicants consider as their invention by restricting a Markush group unless the subject matter in a claim lacks unity of invention. The MPEP indicates that if the members of a Markush group are so closely related that a search and examination on the merits can be made without serious burden,

however, the examiner must examiner all the members of the Markush group in the claim on the merits, even though they are directed to independent and distinct inventions. *Id.* In the present case, the individual mutations have been shown to have a common utility: their detection indicates that the organism containing them is resistant to an important class of anti-tuberculosis drugs. Moreover, a search of the gene itself will reveal that Applicants were the first to discover its function. Given that that is the case, Applicants must necessarily be the first to have discovered the claimed methods for detecting resistance to ETA by detecting any mutation in the gene, including the ones specified in the Markush groups. The members of the Markush groups in this case, therefore, are so closely related that there cannot be a serious burden on the Examiner to consider them on the merits together.

4. Summary

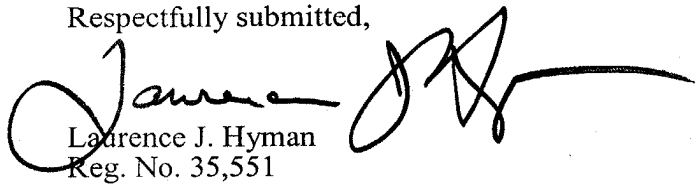
In brief, the Action suffers from several serious deficiencies. First, it improperly rewrites the claim by adding to it recitations not in the claim as presented. Second, it fails to follow proper examination practice, as set forth in the MPEP, regarding the examination of linking claims. Third, the Action restricts a Markush group in which the members are so closely related as to permit their examination without a serious burden on the Examiner. For all these reasons, the restriction should be reconsidered and, upon reconsideration, withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at .

Respectfully submitted,



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